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Pro Ile Glu Asp Lys Pro Ser Asn Ile Tyr Ser Asn Leu Cys Asn Gln
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Ala His Ser Ala Gly Met Val Asp Asn Val Pro Gly Pro Ala Ser Asp 100 105 110

Asp Asp Val Asp Ala Gly Gly Gly Arg Pro Xaa Pro Gly Gly Met Thr 115 120 125

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Leu Phe His Arg Gly Ala Arg Gly Val Pro Lys Phe Lys Ser Ala Gln 50 55 60

Pro Pro Ser Leu Pro Ile Ser Pro Pro Pro Met Ser Pro Ser Ser Tyr 65 70 75 80

Phe Ala Ile Pro Pro Gly Leu Ser Pro Ala Glu Leu Leu Asp Ser Pro 85 90 95

Val Leu Leu His Ser Ser Ser Asn Ile Leu Ala Ser Pro Thr Thr Gly
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Ala Ile Pro Ala Gln Arg Phe Asp Trp Lys Lys Ala Ala Asp Leu Ile 115 120 125

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Ala Ser Gln Gln Asp Asp Ser Arg Gly Asp Phe Ser Phe His Thr Asn 130 135 140

Ser Asp Ala Met Ala Ala Gln Pro Ala Ser Phe Pro Ser Phe Lys Glu 145 150 155 160

Gln Glu Gln Gln Val Val Glu Ser Ser Lys Asn Gly Ala Ala Ala Ala 165 170 175

Ser Ser Asn Lys Ser Gly Gly Gly Gly Asn Asn Lys Leu Glu Asp Gly 180 185 190

Tyr Asn Trp Arg Lys Tyr Gly Gln Lys Gln Val Lys Gly Ser Glu Asn 195 200 205

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Lys Val Glu Arg Ser Leu Ala Asp Gly Arg Ile Thr Gln Ile Val Tyr 225 230 235 240

Lys Gly Ala His Asn His Pro Lys Pro Leu Ser Thr Ala Ala Thr Pro 245 250 255

Leu Pro Ala Pro Pro Pro Pro Pro Ala Pro Thr Thr Ser Arg Pro 260 265 270

Ala Arg Ala Arg Thr Ser Thr Pro Pro Arg Arg Pro Arg Thr Pro Pro 275 280 285

Ser Arg Ser Ala Thr Thr Arg Pro Thr Thr His Arg Thr Ala Ala Arg 290 295 300

Ala Thr Ser Pro Lys Pro Ser Ala Gly Lys Glu Asp Ala Asp Asn Glu 305 310 315 320

Gly Ser Ser Gly Gly Met Gly Gly Gly Ala Gly Gly Asn Pro Val Arg 325 330 335

Glu Pro Arg Leu Val Val Gln Thr Leu Ser Asp Ile Asp Ile Leu Asp 340 345 350

Asn Gly Phe Arg Trp Arg Lys Tyr Gly Gln Lys Val Val Lys Gly Asn 355 360 365

Pro Asn Pro Arg Ser Tyr Tyr Lys Cys Thr Thr Val Gly Cys Pro Val

Arg Lys His Val Glu Arg Ala Ser His Asp Thr Arg Ala Val Ile Thr 385 390 395 400



Thr Tyr Glu Gly Lys His Asn His Asp Val Pro Val Arg Pro Arg Arg 405 410 415

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Ser Gly Pro Thr Asp Val Ala Ala Ala Gln Gln Gly Pro Tyr Thr Leu 435 440 445

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Gln Pro Pro Ser Leu Pro Leu Ser Pro Pro Pro Val Ser Pro Ser Ser 65. 70 75 80

Tyr Phe Ala Ile Pro Pro Gly Leu Ser Pro Thr Glu Leu Leu Asp Ser 85 90 95

Pro Val Leu Ser Ser Ser His Ile Leu Ala Ser Pro Thr Thr Gly
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Ala Ile Pro Ala Gln Arg Tyr Asp Trp Lys Ala Ser Ala Asp Leu Ile 115 120 125

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Ser Asp Ala Met Ala Ala Gln Pro Ala Ser Phe Pro Ser Phe Lys Glu 145 150 155 160

Gln Glu Gln Gln Val Val Glu Ser Ser Lys Asn Gly Ala Ala Ala Ala 165 170 175

Ser Ser Asn Lys Ser Gly Gly Gly Asn Asn Lys Leu Glu Asp Gly 180 185 190

Tyr Asn Trp Arg Lys Tyr Gly Gln Lys Gln Val Lys Gly Ser Glu Asn. 195 200 205

Pro Arg Ser Tyr Tyr Lys Cys Thr Tyr Asn Gly Cys Ser Met Lys Lys 210 215 220

Lys Val Glu Arg Ser Leu Ala Asp Gly Arg Ile Thr Gln Ile Val Tyr 225 230 235 240

Lys Gly Ala His Asn His Pro Lys Pro Leu Ser Thr Arg Arg Asn Ala 245 250 255

Ser Ser Cys Ala Thr Ala Ala Ala Cys Ala Asp Asp Leu Ala Ala Pro 260 265 270

Gly Ala Gly Ala Asp Gln Tyr Ser Ala Ala Thr Pro Glu Asn Ser Ser 275 280 285

Val Thr Phe Gly Asp Asp Glu Ala Asp Asn Ala Ser His Arg Ser Glu 290 295 300

Gly Asp Glu Pro Glu Ala Lys Arg Trp Lys Glu Asp Ala Asp Asn Glu 305 310 315 320

Gly Ser Ser Gly Gly Met Gly Gly Gly Ala Gly Gly Lys Pro Val Arg 325 330 335

Glu Pro Arg Leu Val Val Gln Thr Leu Ser Asp Ile Asp Ile Leu Asp 340 345 350

Asp Gly Phe Arg Trp Arg Lys Tyr Gly Gln Lys Val Val Lys Gly Asn 355 360 365

Pro Asn Pro Arg Ser Tyr Tyr Lys Cys Thr Thr Val Gly Cys Pro Val 370 375 380

Arg Lys His Val Glu Arg Ala Ser His Asp Thr Arg Ala Val Ile Thr 385 390 395 400

Thr Tyr Glu Gly Lys His Asn His Asp Val Pro Val Gly Arg Gly Gly 405 410 415

Gly Gly Arg Ala Pro Ala Pro Ala Pro Pro Thr Ser Gly Ala Ile 420 425 430

Arg Pro Ser Ala Val Ala Ala Ala Gln Gln Gly Pro Tyr Thr Leu Glu 435 440 445

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Gly Leu Ser Glu Arg Thr Gly Ser Gly Val Pro Lys Phe Lys Ser Thr 50 55 60

Pro Pro Pro Ser Leu Pro Leu Ser Pro Pro Pro Ile Ser Pro Ser Ser 65 70 75 80

Tyr Phe Ala Ile Pro Pro Gly Leu Ser Pro Ala Glu Leu Leu Asp Ser 85 90 95

Pro Val Leu Asn Ser Ser Asn Ile Leu Pro Ser Pro Thr Thr Gly
100 105 110

Ala Phe Val Ala Gln Ser Phe Asn Trp Lys Ser Ser Ser Gly Gly Asn 115 120 125

Gln Gln Ile Val Lys Glu Glu Asp Lys Ser Phe Ser Asn Phe Ser Phe 130 135

Gln Thr Arg Ser Gly Pro Pro Ala Ser Ser Thr Ala Thr Tyr Gln Ser 145 150 155 160

Ser Asn Val Thr Val Gln Thr Gln Gln Pro Trp Ser Phe Gln Glu Ala 165 170 175

Thr Lys Gln Asp Asn Phe Ser Ser Gly Lys Gly Met Met Lys Thr Glu 180 185 190

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Thr Asn His Ser Asn Gly Phe Gln Ser Asp Tyr Gly Asn Tyr Pro Pro 210 215 220

Gln Ser Gln Thr Leu Ser Arg Arg Ser Asp Asp Gly Tyr Asn Trp Arg 225 230 . 235 240

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Tyr Lys Cys Thr Tyr Pro Asn Cys Pro Thr Lys Lys Lys Val Glu Arg 260 265 270

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His Pro Lys Pro Gln Asn Thr Arg Arg Asn Ser Ser Asn Ser Ser Ser 290 295 300

Leu Ala Ile Pro His Ser Asn Ser Ile Arg Thr Glu Ile Pro Asp Gln 305 310 315 320

Ser Tyr Ala Thr His Gly Ser Gly Gln Met Asp Ser Ala Ala Thr Pro 325 330 335

Glu Asn Ser Ser Ile Ser Ile Gly Asp Asp Phe Glu Gln Ser Ser 340 345 350

Gln Lys Cys Lys Ser Gly Gly Asp Glu Tyr Asp Glu Asp Glu Pro Asp

Ala Lys Arg Trp Lys Ile Glu Gly Glu Asn Glu Gly Met Ser Ala Pro 370 375 380

Gly Ser Arg Thr Val Arg Glu Pro Arg Val Val Val Gln Thr Thr Ser 385 390 395 400

Asp Ile Asp Ile Leu Asp Asp Gly Tyr Arg Trp Arg Lys Tyr Gly Gln 405 410 415

Lys Val Val Lys Gly Asn Pro Asn Pro Arg Ser Tyr Tyr Lys Cys Thr 420 425 430

His Pro Gly Cys Pro Val Arg Lys His Val Glu Arg Ala Ser His Asp 435 440 445

Leu Arg Ala Val Ile Thr Thr Tyr Glu Gly Lys His Asn His Asp Val 450 455 460

Pro Ala Ala Arg Gly Ser Gly Ser His Ser Val Asn Arg Pro Met Pro 465 470 475 480

Asn Asn Ala Ser Asn His Thr Asn Thr Ala Ala Thr Ser Val Arg Leu 485 490 495

Leu Pro Val Ile His Gln Ser Asp Asn Ser Leu Gln Asn Gln Arg Ser 500 505 510

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<212> PRT

<213> Triticum aestivum

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Asp Leu Pro Ser Ala Ala Gly Ser Ser Pro Glu Lys Pro Tyr Pro Ala 20 25 30

Asp Arg Arg Val Ala Ala Leu Ala Gly Ala Gly Ala Arg Tyr Lys Ala 35 40 45

Met Ser Pro Ala Arg Leu Pro Ile Ser Arg Glu Pro Cys Leu Thr Ile
50 55 60

Pro Ala Gly Phe Ser Pro Ser Ala Leu Leu Asp Ser Pro Val Leu Leu 65 70 75 80

Thr Asn Phe Lys Val Glu Pro Ser Pro Thr Thr Gly Ser Leu Ser Met 85 90 95

Ala Ala Ile Met His Lys Ser Ala His Pro Asp Ile Leu Pro Ser Pro 100 105 110

Arg Asp Lys Ser Ile Arg Ala His Glu Asp Gly Gly Ser Arg Asp Phe 115 120 125

Glu Phe Lys Pro His Leu Asn Ser Ser Ser Gln Ser Leu Ala Pro Ala 130 135 140

Met Ser Asp Leu Lys Lys His Glu His Ser Met Gln Asn Gln Ser Met 145 150 155 160

Asn Pro Ser Ser Ser Ser Asn Met Val Asn Glu Asn Arg Pro Pro
165 170 175

Cys Ser Arg Glu Ser Ser Leu Thr Val Asn Val Ser Ala Pro Asn Gln 180 185 190

Pro Val Gly Met Val Gly Leu Thr Asp Asn Met Pro Ala Glu Val Gly

Thr Ser Glu Pro Gln Gln Met Asn Ser Ser Asp Asn Ala Met Gln Glu 210 215 220

Pro Gln Ser Glu Asn Val Ala Asp Lys Ser Ala Asp Asp Gly Tyr Asn 225 230 235 240

Trp Arg Lys Tyr Gly Gln Lys His Val Lys Gly Ser Glu Asn Pro Arg 245 250 250

Ser Tyr Tyr Lys Cys Thr His Pro Asn Cys Glu Val Lys Lys Leu Leu 260 265 270

11 DISDDE

uyeşu

PCT/US00/35310 WO 01/49840

Glu Arg Ala Val Asp Gly Leu Ile Thr Glu Val Val Tyr Lys Gly Arg 280

- His Asn His Pro Lys Pro Gln Pro Asn Arg Arg Leu Ala Gly Gly Ala 295
- Val Pro Ser Asn Gln Gly Glu Glu Arg Tyr Asp Gly Ala Ala Ala Ala
- Asp Asp Lys Ser Ser Asn Ala Leu Ser Asn Leu Ala Asn Pro Val Asn
- Ser Pro Gly Met Val Glu Pro Val Pro Val Ser Val Ser Asp Asp
- Ile Asp Ala Gly Gly Gly Arg Pro Tyr Pro Gly Asp Asp Ala Thr Glu
- Glu Asp Leu Glu Ser Lys Arg Arg Lys Met Glu Ser Ala Gly Ile Asp
- Ala Ala Leu Met Gly Lys Pro Asn Arg Glu Pro Arg Val Val Gln 390 395
- Thr Val Ser Glu Val Asp Ile Leu Asp Asp Gly Tyr Arg Trp Arg Lys
- Tyr Gly Gln Lys Val Val Lys Gly Asn Pro Asn Pro Arg Ser Tyr Tyr
- Lys Cys Thr Ser Thr Gly Cys Pro Val Arg Lys His Val Glu Arg Ala
- Ser His Asp Pro Lys Ser Val Ile Thr Thr Tyr Glu Gly Lys His Asn
- His Glu Val Pro Ala Ala Arg Asn Ala Thr His Glu Met Ser Ala Pro
- Pro Met Lys Asn Val Val His Gln Ile Asn Ser Ser Met Pro Ser Ser
- Ile Gly Gly Met Met Arg Ala Cys Glu Ala Arg Asn Phe Ser Asn Gln
- Tyr Ser Gln Ala Ala Glu Thr Asp Asn Val Ser Leu Asp Leu Gly Val 520
- Gly Ile Ser Pro Asn His Ser Asp Ala Thr Asn Gln Met Gln Ser Ser 535
- Gly Pro Asp Gln Met Gln Tyr Gln Met Gln Ser Met Ala Ser Met Tyr 545
- Gly Asn Met Arg His Pro Ser Ser Met Ala Val Pro Thr Val Gln Gly 570
- Asn Ser Ala Gly Arg Met Tyr Gly Ser Arg Glu Glu Lys Gly Asn Glu 585 580

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Gly Phe Thr Phe Arg Ala Thr Pro Met Asp His Ser Ala Asn Leu Cys 595 600 605

Tyr Ser Gly Ala Gly Asn Leu Val Met Gly Pro 610 615

<210> 13

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<212> PRT

<213> Ipomoea batatas

<400> 13

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Leu Ala Ser Asp Ala Tyr Ser Gly Gly Ser Val Ser Arg Gly Leu Gly 35 40 45

Asp Arg Ile Ala Glu Arg Thr Gly Ser Gly Val Pro Lys Phe Lys Ser 50 55 60

Leu Pro Pro Pro Ser Leu Pro Leu Ser Ser Pro Ala Val Ser Pro Ser 65 70 75 80

Ser Tyr Phe Ala Phe Pro Pro Gly Leu Ser Pro Ser Glu Leu Leu Asp 85 90 95

Ser Pro Val Leu Leu Ser Ser Ser Asn Ile Leu Pro Ser Pro Thr Thr 100 105 110

Gly Thr Phe Pro Ala Gln Thr Phe Asn Trp Lys Asn Asp Ser Asn Ala 115 120 125

Ser Gln Glu Asp Val Lys Gln Glu Glu Lys Gly Tyr Pro Asp Phe Ser 130 135 140

Phe Gln Thr Asn Ser Ala Ser Met Thr Leu Asn Tyr Glu Asp Ser Lys 145 150 155 160

Arg Lys Asp Glu Leu Asn Ser Leu Gln Ser Leu Pro Pro Val Thr Thr 165 170 175

Ser Thr Gln Met Ser Ser Gln Asn Asn Gly Gly Ser Tyr Ser Glu Tyr 180 185 190

Asn Asn Gln Cys Cys Pro Pro Ser Gln Thr Leu Arg Glu Gln Arg Arg 195 200 205

Ser Asp Asp Gly Tyr Asn Trp Arg Lys Tyr Gly Gln Lys Gln Val Lys 210 215 220

Gly Ser Glu Asn Pro Arg Ser Tyr Tyr Lys Cys Thr His Pro Asn Cys 225 230 235

Pro Thr Lys Lys Lys Val Glu Arg Ala Leu Asp Gly Gln Ile Thr Glu 245 250 255

Ile Val Tyr Lys Gly Ala His Asn His Pro Lys Pro Gln Ser Thr Arg 260 265 270

Arg Ser Ser Ser Ser Thr Ala Ser Ser Ala Ser Thr Leu Ala Ala Gln 275 280 285

Ser Tyr Asn Ala Pro Ala Ser Asp Val Pro Asp Gln Ser Tyr Trp Ser 290 295 300

Asn Gly Asn Gly Gln Met Asp Ser Val Ala Thr Pro Glu Asn Ser Ser 305 310 315 320

Ile Ser Val Gly Asp Asp Glu Phe Glu Gln Ser Ser Gln Lys Arg Glu 325 330 335

Ser Gly Gly Asp Glu Phe Asp Glu Asp Glu Pro Asp Ala Lys Arg Trp 340 345 350

Lys Val Glu Asn Glu Ser Glu Gly Val Ser Ala Gln Gly Ser Arg Thr 355 360 365

Val Arg Glu Pro Arg Val Val Val Gln Thr Thr Ser Asp Ile Asp Ile 370 375 380

Leu Asp Asp Gly Tyr Arg Trp Arg Lys Tyr Gly Gln Lys Val Val Lys 385 390 395 400

Gly Asn Pro Asn Pro Arg Ser Tyr Tyr Lys Cys Thr Ser Gln Gly Cys
405 410 415

Pro Val Arg Lys His Val Glu Arg Ala Ser His Asp Ile Arg Ser Val 420 425 430

Ile Thr Thr Tyr Glu Gly Lys His Asn His Asp Val Pro Ala Ala Arg
435
440
445

Gly Ser Gly Ser His Gly Leu Asn Arg Gly Ala Asn Pro Asn Asn Asn 450 455 460

Ala Ala Met Ala Met Ala Ile Arg Pro Ser Thr Met Ser Leu Gln Ser 465 470 475 480

Asn Tyr Pro Ile Pro Ile Pro Ser Thr Arg Pro Met Gln Gln Glu 485 490 495

Gly Gln Ala Pro Tyr Glu Met Leu Gln Gly Ser Gly Gly Phe Gly Tyr 500 505 510

Ser Gly Phe Gly Asn Pro Met Asn Ala Tyr Ala Asn Gln Ile Gln Asp 515 520 525

Asn Ala Phe Ser Arg Ala Lys Glu Glu Pro Arg Asp Asp Leu Phe Leu 530 535 540

Asp Thr Leu Leu Ala 545

ugaspal "Ulauue

WO 01/49840 PCT/US00/35310

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